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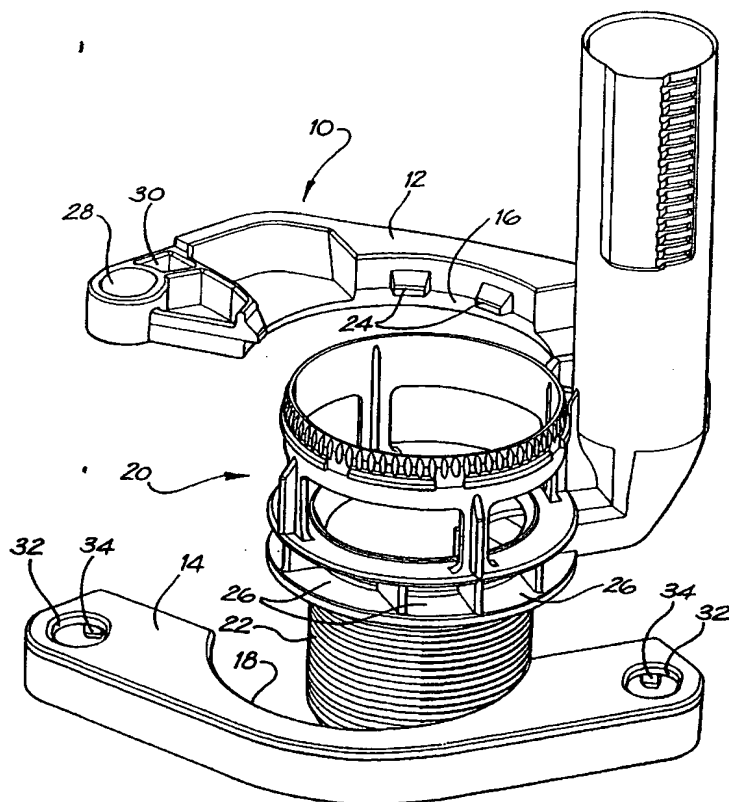
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(54) Title: A CISTERN OUTLET VALVE MOUNTING BRACKET ASSEMBLY AND A METHOD OF INSTALLING AN OUT-  
LET VALVE IN A CISTERN



(57) Abstract: A cistern outlet valve mounting bracket assembly (10). The assembly includes first and second bracket members (12, 14) adapted for positioning about an outlet valve (20) in engagement with each other and the valve (20). The members (12, 14) also have means (28, 32) to allow fixing of the engaged members (12, 14) to a cistern (38). A method of installing an outlet valve (20) in a cistern (38) is also disclosed.

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A CISTERN OUTLET VALVE MOUNTING BRACKET ASSEMBLY AND  
A METHOD OF INSTALLING AN OUTLET VALVE IN A CISTERN

Technical Field

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The present invention relates to a cistern outlet valve mounting bracket assembly and a method of installing an outlet valve in a cistern. A cistern is known as a flush tank in the United States of America.

10 The invention has been primarily developed for mounting outlet valves in one piece toilet suites (ie. suites that have an integral cistern and pan) and will be described hereinafter with reference to this application. However, it would be appreciated that the invention is not limited to this particular use and, for example, can also be used in mounting an outlet valve in a separate cistern.

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Background of the Invention

20 Outlet valves must be installed in cisterns in such a manner as to allow their removal for service and repair. In a toilet suite that has a separate cistern and pan, the outlet valve has a threaded tail which passes through an opening in the bottom of the cistern and is fastened thereto by an external nut. A seal is placed in the potential leak path between the cistern interior and the valve. When the nut is unscrewed from the tail, the outlet valve can be removed from the cistern.

25 In a one piece toilet suite the underside of the cistern is concealed by a shroud that extends from the cistern to the pan. The shroud makes access to the underside of the cistern very difficult, particularly after the suite has been grouted to a bathroom floor.

30 One known arrangement which avoids having to access the underside of the cistern to remove the outlet valve uses the previously described nut to instead clamp a stainless steel mounting plate to the valve tail, with a seal therebetween. A second seal is then placed on the underside of the mounting plate. The mounting plate, and thus the outlet valve, is then fixed to the cistern via two captive bolts in the base of the cistern that pass through holes in the mounting plate.

35 This known arrangement has several disadvantages. Firstly, an additional potential leak path is introduced at the second seal between the mounting plate and the cistern. Secondly, the stainless steel plate is expensive to manufacture and time consuming to install. Thirdly, the addition of the mounting plate and the second seal